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10/044,494	01/11/2002	Simon Chu	RPS920010115US1	9283

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EXAMINER
PATEL, ANAND B

ART UNIT	PAPER NUMBER
2116	

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/044,494	CHU ET AL.
	Examiner	Art Unit	
	Anand Patel	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _11 February 2005_.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-27_ is/are pending in the application.

  4a) Of the above claim(s) _22-24_ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-21,25 and 26_ is/are rejected.

7)☒ Claim(s) _27_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

  a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).

  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment to the claims filed on 2/11/05 was entered. Applicant has amended claims 1,

5-6, 9-10, 15, 21, canceled claims 22-24, and added claims 25-27.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No

6765802 to Ridley, in view of US Patent No 4308911 to Mandl and US Patent No 6651180 to

Wickeraad.

- As per claim 1, Ridley discloses a method for co-operative thermal management of a

  plurality of independent electronic devices (16, 18, 20; column 6, lines 2-6) within a common

  enclosure (10), said method comprising:

  - A method wherein each of said plurality of independent electronic devices has a

    thermal controller (39, 40, 42; column 6, lines 33-35); and

  - Measuring a temperature of each of said plurality of independent electronic devices

    (column 8, lines 55-63) and for each of said plurality of independent electronic devices:

  - Determining if said measured temperature exceeds a threshold value for said

    independent electronic device (column 8, line 64 – column 9, line 5)

- Counting down a count-down value as long as the measured temperature exceeds a threshold value (events 190 and 160; column 9, lines 2-12).

Ridley fails to disclose a system wherein priority numbers are designated to each of the electronic devices. Ridley also fails to disclose that when the measured temperature exceeds the threshold temperature, a count-down value is initialized to the designated priority number of that device.

Wickeraad discloses a method comprising:

- Designating a priority number for each of a plurality of independent electronic devices (column 5, lines 21-26); and

- In response to a determination that said measured temperature exceeds a threshold value, initializing a count-down value to said designated priority number of said independent electronic device (column 5, lines 21-26; the threshold for the timeouts is the count-down value that is the prioritization of the electronic device).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Ridley and Wickeraad. The motivation to combine, as stated in Wickeraad column 5, lines 21-26, allows a processor to complete cycles long after a catastrophic failure (system temperature exceeds threshold) occurs because peripheral devices are shut down.

Wickeraad fails to explicitly disclose powering down a device once a pre-determined action level is reached. Mandl teaches a method comprising in response to the count-down value reaching a pre-determined action level powering down the independent electronic device (column 19, lines 21-23).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings to Ridley and Mandl. The motivation to combine is the ability to have a controlled power shutdown sequence (column 2, lines 39-42).

- As per claim 2, Wickeraad discloses a method wherein said initializing a count-down value further includes initiating an interval timer (column 5, lines 15-17). Wickeraad teaches the use of individual timeouts, and as discussed above, it would be an obvious variation to initiate a single timer (and it would be inherent that when using timeouts a timing device is used).

- As per claim 3, Ridley discloses a method wherein said initializing a count-down value further includes waiting a first predetermined period of time before repeating said measuring of said independent electronic device in response to a determination that said measured temperature does not exceed said threshold value (events 190 and 160; column 9, lines 2-12)

- As per claim 4, Mandl discloses a method that further includes:

  - Determining if said count-down value is equal to zero (column 19, lines 18-21; column 19, lines 31-32); and

  - Powering-down said independent electronic device in response to a determination that said count-down value is equal to zero (column 9, lines 21-23). Mandl fails to disclose repeating the temperature measurements.

  Ridley discloses a method comprising waiting a second predetermined period of time before obtaining a second temperature measurement of said independent electronic device and determining if said second temperature measurement exceeds said threshold value (figure 6, loop 160-180).

- As per claim 5, Wickeraad discloses a method that further includes:

  - Determining if said interval timer has expired (figure 3, item 154) in response to a determination that said second temperature measurement exceeds said threshold value (Ridley figure 6, item 180); and

  - Decrementing said count-down value, and subsequently reinitiating said interval timer and repeating said determining if said count-down value is equal to zero (refer to discussion above, involving timeouts and count-down values) in response to a determination that said interval timer has expired (figure 3, item 154), otherwise repeat waiting a second predetermined period of time before obtaining a temperature measurement (Ridley figure 6, item 180).

2. Claims 6-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ridley, in view of Mandl and Wickeraad, and further in view of US Patent Application Publication No 2003/0084359 to Bresniker et al (Bresniker).

- As per claim 6, Ridley discloses a method for co-operative thermal management of a plurality of independent electronic devices (16, 18, 20; column 6, lines 2-6) within a common enclosure (10), said method comprising:

  - Measuring a temperature of each of said plurality of independent electronic devices (column 8, lines 55-63) and for each of said plurality of independent electronic devices:

  - Determining if said measured temperature exceeds a threshold value for said independent electronic device (column 8, line 64 – column 9, line 5)

  - Counting down a count-down value as long as the measured temperature exceeds a threshold value (events 190 and 160; column 9, lines 2-12).

Ridley fails to disclose a system wherein priority numbers are designated to each of the electronic devices, which contain service processors. Ridley also fails to disclose that when the measured temperature exceeds the threshold temperature, a count-down value is initialized to the designated priority number of that device.

Wickeraad discloses a method comprising:

• Designating a priority number for each of a plurality of independent electronic devices (column 5, lines 21-26); and

• In response to a determination that said measured temperature exceeds a threshold value, initializing a count-down value to said designated priority number of said independent electronic device (column 5, lines 21-26; the threshold for the timeouts is the count-down value that is the prioritization of the electronic device).

Wickeraad fails to explicitly disclose powering down a device once a pre-determined action level is reached and that each electronic device has a service processor. Mandl teaches a method comprising in response to the count-down value reaching a pre-determined action level powering down the independent electronic device (column 19, lines 21-23).

Mandl fails to disclose independent electronic devices with service processors. Bresniker discloses a method wherein each of said plurality of independent electronic devices has a service processor that remains operational when said electronic device is powered down (management unit of claim 17). Bresniker also discloses a powering-up of said electronic devices upon determination that a temperature has lowered beneath a threshold value (paragraph 56). This system allows computers to reduce energy and thus save money

(paragraph 13). Thus it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings to Ridley and Bresniker. The motivation to combine comes from the ability in Bresniker to save power and money.

- As per claim 7, Wickeraad discloses a method wherein said initializing a count-down value further includes initiating an interval timer (column 5, lines 15-17). Wickeraad teaches the use of individual timeouts, and as discussed above, it would be an obvious variation to initiate a single timer (and it would be inherent that when using timeouts a timing device is used).

- As per claim 8, Mandl discloses a method that further includes:

  - Determining if said count-down value is equal to zero (column 19, lines 18-21; column 19, lines 31-32); and

  - Powering-down said independent electronic device in response to a determination that said count-down value is equal to zero (column 9, lines 21-23). Mandl fails to disclose repeating the temperature measurements.

  Ridley discloses a method comprising waiting a second predetermined period of time before obtaining a second temperature measurement of said independent electronic device and determining if said second temperature measurement exceeds said threshold value (figure 6, loop 160-180).

- As per claim 9, Wickeraad discloses a method further comprising:

  - Determining if said interval timer has expired (figure 3, item 154) in response to a determination that said second temperature measurement exceeds said threshold value (Ridley figure 6, item 180); and

- Decrementing said count-down value, and subsequently reinitiating said interval timer and repeating said determining if said count-down value is equal to zero (refer to discussion above, involving timeouts and count-down values) in response to a determination that said interval timer has expired (figure 3, item 154), otherwise repeat waiting a second predetermined period of time before obtaining a temperature measurement (Ridley figure 6, item 180).

- As per claim 10, Ridley discloses an electronic device comprising:

  - A thermal controller (39, 40, 42; column 6, lines 33-35); and

  - Means for measuring a temperature of each of said electronic devices (column 8, lines 55-63)

  - Means for determining if said measured temperature exceeds a threshold value for said electronic device (column 8, line 64 – column 9, line 5)

  - Means for counting down a count-down value as long as the measured temperature exceeds a threshold value (events 190 and 160; column 9, lines 2-12).

  Ridley fails to disclose a system wherein priority numbers are designated to each of the electronic devices. Ridley also fails to disclose that when the measured temperature exceeds the threshold temperature, a count-down value is initialized to the designated priority number of that device.

  Wickeraad discloses a method comprising:

  - A designated priority number (column 5, lines 21-26); and

  - Means for in response to a determination that said measured temperature exceeds a threshold value, initializing a count-down value to said designated priority number of

said electronic device (column 5, lines 21-26; the threshold for the timeouts is the count-down value that is the prioritization of the electronic device).

Wickeraad fails to explicitly disclose powering down a device once a pre-determined action level is reached. Mandl teaches means for responsive to the count-down value reaching a pre-determined action level powering down the independent electronic device (column 19, lines 21-23).

- As per claim 11, Bresniker discloses an electronic device wherein said thermal controller is embodied in a service processor that remains operational when said electronic device is powered down (management unit of claim 17).

- As per claim 12, Mandl discloses an electronic device wherein the controller powers down the electronic device in response to a determination to a given condition and said count-down value is equal to zero (column 19, lines 18-21; column 19, lines 31-32). Mandl fails to disclose the condition of a temperature being above a threshold. Ridley discloses a means for determining if a temperature is above a threshold (column 8, line 64 – column 9, line 5).

- As per claim 13, Mandl discloses an electronic device wherein said controller powers up said electronic device in response to a given condition and said count-down value is equal to zero (column 19, lines 23-29). Mandl fails to disclose the condition of a temperature being below a threshold. Ridley discloses a means for determining is a temperature does not exceed a threshold value (column 8, line 64 – column 9, line 5). Ridley fails to disclose the controller being a service processor. Bresniker discloses a controller that is a service processor that can power up an electronic device (management unit of claim 17).

- As per claim 14, Bresniker discloses an electronic device wherein said electronic device is a server blade (figure 3, item 300).

- As per claim 15, Ridley discloses a data processing system comprising:

  - An enclosure (10);

  - A plurality of independent electronic devices housed within said enclosure (39, 40, 42; column 6, lines 33-35), wherein each of said plurality of independent electronic devices has:

    - A thermal controller (39, 40, 42; column 6, lines 33-35), including:

    - Means for measuring a temperature of said electronic device (column 8, lines 55-63)

    - Means for determining if said measured temperature exceeds a threshold value for said independent electronic device (column 8, line 64 – column 9, line 5)

    - Means for counting down a count-down value as long as the measured

temperature exceeds a threshold value (events 190 and 160; column 9, lines 2-12). Ridley fails to disclose a system wherein priority numbers are designated to each of the electronic devices. Ridley also fails to disclose that when the measured temperature exceeds the threshold temperature, a count-down value is initialized to the designated priority number of that device.

Wickeraad discloses a method comprising:

- A designated priority number (column 5, lines 21-26); and

- Means for responsive to a determination that said measured temperature exceeds a threshold value, initializing a count-down value to said designated priority number of

said electronic device (column 5, lines 21-26; the threshold for the timeouts is the count-down value that is the prioritization of the electronic device).

Wickeraad fails to explicitly disclose powering down a device once a pre-determined action level is reached. Mandl teaches means for responsive to the count-down value reaching a pre-determined action level powering down the independent electronic device (column 19, lines 21-23).

• As per claim 16, Bresniker discloses a data processing system further comprising a backplane coupled to said plurality of independent electronic devices (figure 1, item 106) and a plurality of fans (paragraph 29).

• As per claim 17, Bresniker discloses a data processing system wherein said thermal controller is embodied in a service processor that remains operational when said electronic device is powered down (management unit of claim 17).

• As per claim 18, Mandl discloses a data processing system wherein the controller powers down the electronic device in response to a determination to a given condition and said count-down value is equal to zero (column 19, lines 18-21; column 19, lines 31-32). Mandl fails to disclose the condition of a temperature being above a threshold. Ridley discloses a means for determining if a temperature is above a threshold (column 8, line 64 – column 9, line 5).

• As per claim 19, Mandl discloses a data processing system wherein said controller powers up said electronic device in response to a given condition and said count-down value is equal to zero (column 19, lines 23-29). Mandl fails to disclose the condition of a temperature being below a threshold. Ridley discloses a means for determining is a

temperature does not exceed a threshold value (column 8, line 64 – column 9, line 5). Ridley

fails to disclose the controller being a service processor. Bresniker discloses a controller that

is a service processor that can power up an electronic device (management unit of claim 17).

- As per claim 20, Bresniker discloses a data processing system wherein said electronic

device is a server blade (figure 3, item 300).

- As per claim 21, Ridley discloses a computer readable medium having stored thereon

computer executable instructions for implementing a method for co-operative thermal

management of a plurality of independent electronic devices (16, 18, 20; column 6, lines 2-6)

housed within a common enclosure (10), said computer executable instructions when

executed by one of said plurality of independent electronic devices perform the steps of:

- Measuring a temperature of said independent electronic device (column 8, lines 55-

63);

- Determining if said measured temperature exceeds a threshold value for said

independent electronic device (column 8, line 64 – column 9, line 5)

- Counting down a count-down value as long as the measured temperature exceeds a

threshold value (events 190 and 160; column 9, lines 2-12).

Ridley fails to disclose a system wherein priority numbers are designated to each of the

electronic devices. Ridley also fails to disclose that when the measured temperature

exceeds the threshold temperature, a count-down value is initialized to the designated

priority number of that device.

Wickeraad discloses a method comprising:

- Designating a priority number for said independent electronic device (column 5, lines 21-26); and

- In response to a determination that said measured temperature exceeds a threshold value, initializing a count-down value to said designated priority number of said independent electronic device (column 5, lines 21-26; the threshold for the timeouts is the count-down value that is the prioritization of the electronic device) and initiate an interval timer (column 5, lines 15-17).
Wickeraad fails to explicitly disclose powering down a device once a pre-determined action level is reached. Mandl teaches a method comprising in response to the count-down value reaching a pre-determined action level powering down the independent electronic device (column 19, lines 21-23).

- As per claim 25, Ridley discloses a method wherein said step of measuring said temperature of each of said plurality of independent electronic devices is in response to a specific event (180).

- As per claim 26, Ridley discloses a method wherein said specific event is an interior of said common enclosure reaching a predetermined internal temperature (180).

Allowable Subject Matter

3. Claim 27 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anand Patel whose telephone number is (571) 272-7211. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on (571) 272-3670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent
Application Information Retrieval (PAIR) system. Status information for published applications
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ABP

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